

CLAIMS

1. (Currently amended) A device for forming ~~an~~ a two dimensional image on a screen comprising;
a coherent illumination means,
an electrically addressed spatial light modulator means located in a path of light from the coherent illumination means,
means for producing sequential computer generated hologram images for display on the electrically addressed spatial light modulator means, and
optics to direct light diffracted by the electrically addressed spatial light modulator means to the screen,
wherein the sequential computer generated ~~image or~~ images displayed by on the electrically addressed spatial light modulator means result in a single frame of the two dimensional image ~~being formed at the screen~~.
2. (Previously presented) The device according to claim 1 wherein the electrically addressed spatial light modulator means comprises a plurality of electrically addressed spatial light modulators.
3. (Previously presented) The device according to claim 1 wherein the coherent illumination means illuminates the electrically addressed spatial light modulator means with red, green and blue light.

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AMENDMENT

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4. (Currently amended) The device according to claim 3 wherein the electrically addressed spatial light modulator means is sequentially illuminated by the coherent illumination means with red, green and blue light.

5. (Previously presented) The device according to claim 3 wherein separate portions of the electrically addressed spatial light modulator means are simultaneously illuminated by the coherent illumination means with red, green and blue light.

6. (Previously presented) The device according to claim 1 wherein a frame rate of the electrically addressed spatial light modulator means is greater than a frame rate of the two dimensional image formed at the screen.

7. (Previously presented) The device according to claim 1 in which the means for producing computer generated hologram images comprises a store of a plurality of pre-calculated computer generated holographic elements.

8. (Previously presented) The device according to claim 1 in which the means for producing computer generated hologram images is configured to produce computer generated hologram images for display on the electrically addressed spatial light modulator means that provide a regular array of pixels on the screen.

9. (Previously presented) The device according to claim 8 wherein the array of pixels on the screen is sub-divided into blocks and the image at the screen is formed by sequentially writing one or more blocks to the screen.

10. (Previously presented) The device according to claim 1 wherein the coherent illumination means comprises at least one laser.

11. (Previously presented) The device according to claim 1 wherein additional magnification optics are provided such that a magnified two dimensional image may be formed at the screen.

12. (Currently amended) A method of forming a two dimensional image on a screen comprising:
illuminating an electrically addressed spatial light modulator with coherent light,
displaying a computer generated hologram image on the electrically addressed spatial light modulator so as to diffract light therefrom,
sub-dividing the two dimensional image into blocks,
sequentially writing the blocks to the screen, and
directing light diffracted by the electrically addressed spatial light modulator to produce a two dimensional image at the screen.

13. (Cancelled)

14. (Currently amended) A device for forming an image on a screen comprising;
at least one coherent laser,
at least one electrically addressed spatial light modulator located in the path of light from
said at least one coherent laser,
a computer for producing at least one computer generated hologram image for display on
said at least one electrically addressed spatial light modulator, and
optics to direct light diffracted by said at least one electrically addressed spatial light
modulator to the screen, wherein a frame rate of the electrically addressed spatial light modulator
means is greater than a frame rate of the two dimensional image formed at the screen
~~wherein said at least one computer generated image displayed by said at least one
electrically addressed spatial light modulator causes a two dimensional image to be formed at
said screen.~~

15. (Previously presented) The device according to claim 14 further comprising a
plurality of electrically addressed spatial light modulators.

16. (Previously presented) The device according to claim 14 wherein said computer
is configured to produce computer generated hologram images for display on said at least one
electrically addressed spatial light modulator that provides a regular array of pixels on said
screen.

17. (Previously presented) The device according to claim 16 wherein the array of pixels on the screen is sub-divided into blocks and the image at the screen is formed by sequentially writing one or more blocks to the screen.

18. (Previously presented) The device according to claim 14 further comprising a plurality of coherent lasers.

19. (Previously presented) The device according to claim 18 wherein said plurality of coherent lasers comprises at least a red, blue and green laser.

20. (Previously presented) The device according to claim 14 further comprising magnification optics.

21. (Cancelled)

22. (New) The method according to claim 12 wherein a rate of writing the blocks is greater than a frame rate of the two dimensional image produced at the screen.

23. (New) The method according to claim 12 wherein the two dimensional image is comprised of the blocks.

24. (New) The method according to claim 12 wherein the electrically addressed spatial light modulator (EASLM) is comprised of three EASLM each illuminated by a different

color light, wherein different color blocks are sequentially written to the screen to form a single frame of the two dimensional image.